CIVILIAN BLAST RELATED BURN INJURIES (P086)

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**Introduction:** The management of blast related burn injuries is complex due to the nature of the mechanism involved. Most studies were conducted in the Middle East where patients consisted of victims of war or terror attacks. These patients were managed mostly in a military medical setting designed to cope with polytrauma and concurrent burns. There is no English literature describing the experience of a civilian hospital managing blast related burn injuries, mainly because the occurrences of these events are unusual. As the largest regional burn unit, we reviewed and audited the management of these scenarios with the aim of formulating a management pathway.

**Methods:** A 6 year retrospective analysis of all patients coded as sustaining blast related burns was conducted through the unit’s burns database. Of the total 7702 cases in the 6 years, 45 patients were identified with the unique code. Medical case notes were reviewed for information on patient demographics, burn demographics, management and outcomes.

**Results:** 36 patients were identified. Male to female ratio was 11:1. Age range was 12 years to 84 years, with a mean of 34 years. Total body surface area (%TBSA) burn ranged from 0.25% to 60%, with a median of 1%. Most common burn injury was flame (26/36, 72%), followed by chemical (3/36, 8%), scald (3/36, 8%), electrical (2/36, 6%) and contact burns (1/36, 3%). 5/36 patients (14%) had confirmed diagnosis of smoke inhalation. Regarding mechanism of injury; 15 (42%) cases involved large gas explosions, 7 (19%) domestic appliances, 5 (14%) chemical related, 4 (11%) bonfires, 3 (8%) fireworks, and 2 (6%) aerosol containers.

7 of the 36 cases (19%) had full advanced trauma life support (ATLS) management pre-transfer to the burns unit. The Injury Severity Score (ISS) ranged 0-43 (median=2). 4/36 (11%) cases had additional injuries which were deemed minor; 2 fractures and 2 mild corneal abrasion with no residual visual loss, all of which were managed conservatively with appropriate specialist input. 17/36 (47%) patients required admission, of which 7 required BITU admission. The total length of stay ranged 1-365 days (median= 5). 31/36 (85%) patients were managed conservatively of which 2 patients later required surgery due to deeper burns. 5/36 (14%) patients required surgical management at presentation and these were noted to be burns with >15% TBSA requiring resuscitation. 1 case required emergency escharotomies and finger amputations. All patients survived their burn injuries.

**Conclusion:** Our series indicate that burns related blast injuries are uncommon in the civilian setting. Nonetheless, the management these injuries should follow a systematic approach. The presence of burns does not negate completion of ATLS and early referral to appropriate specialist for concurrent injuries. Given the nature of blast injuries involves high velocity or pressure, a screening trauma series to exclude other injuries should be done. Whilst burn resuscitation is important in influencing survival, missing an immediate life or limb-threatening polytrauma undermines subsequent efforts.